

PCT/GB00/03171

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**VERSION WITH MARKINGS TO INDICATE CHANGES MADE**

1. An information carrier comprising a plurality of detectable elements supported by, or incorporated in a substrate, the elements being spaced apart from one another such that the series of spaces between the elements encodes the information carrier, characterised in that each of the spaces can be represented by  $A + mG$ , wherein A is a first fixed value, G is a second fixed value and m is an integer (which may be zero) the values of which are derived from the integers of a predetermined mathematical sequence, and wherein the value of A is different to the value of G.
2. An information carrier comprising a plurality of detectable elements supported by, or incorporated in a substrate, the elements being spaced apart from one another such that the series of spaces between the elements encodes the information carrier, characterized in that each of the spaces can be represented by  $A + mG$ , wherein A is a first fixed value, G is a second fixed value and m is an integer (which may be zero) the values of which are derived by means of a random number generator, and wherein the value of A is different to the value of G.
3. An information carrier as claimed in claim 1, wherein the values of the integer m are selected to be integers derived from the output of a de Bruijn sequence.
4. (Amended) An information carrier as claimed in claim 1 [or 3], wherein the integers m are selected to be integers derived from the output of a binary pseudo-random sequence generator.
5. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said fixed values A and G are units of length.
6. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said fixed values A and G are angles.
7. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein the spacing between adjacent detectable elements is measured from the midpoint of one element to the midpoint of the adjacent element.
8. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said detectable elements are 15 magnetically active elements.

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9. An information carrier as claimed in claim 8, wherein said magnetically active detectable elements comprise high permeability, low coercivity material having an easy axis of magnetisation.

10. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said detectable elements are formed of an optically detectable material.

11. (Amended) An information carrier as claimed in claim 8 [or 9] wherein said the magnetic properties of each of the magnetic elements serves to encode the information carrier.

12. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein the geometric properties of the elements is varied such that the relative dimensions of the elements also serves to encode information.

13. An information carrier as claimed in claim 11 or 12 wherein the magnetic or geometric properties of at least one of the elements is or are known, thereby acting as a reference element, with respect to which, 5 the magnetic or geometric properties of the other detectable elements can be determined when decoding the information carrier.

14. (Amended) An information carrier as claimed in claim 11 or 12 [any one of claims 11, 12 or 13], wherein the length of the magnetic elements is varied such that the relative lengths of said magnetic elements also serves to encode information.

15. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said mathematical sequence is a recurring sequence.

16. (Amended) An information carrier as claimed in claim 1 [any preceding claim], wherein said substrate comprises a linear strip.

17. (Amended) An information carrier as claimed in claim 1, 3 or 16 [any preceding claim], wherein the series of spaces between the elements are chosen such that the encoded information can be determined irrespective of the direction in which the information carrier is read.

18. An information coding method utilising a plurality of detectable elements supported by, or incorporated in a substrate, the elements being spaced apart from one another such that the series of spaces between the elements encodes the information carrier, characterized in that each of the spaces can be represented by  $A + mG$ , wherein A is a

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first fixed value, G is a second fixed value and m is an integer (which may be zero) the values of which are derived from the integers of a predetermined mathematical sequence, and wherein the value of A is different to the value of G.

19. An information coding method utilising a plurality of detectable elements supported by, or incorporated in a substrate, the elements being spaced apart from one another such that the series of spaces between the elements encodes the information carrier, characterized in that each of the spaces can be represented by  $A + mG$ , wherein A is a first fixed value, G is a second fixed value and m is an integer (which may be zero) the values of which are derived by means of a random number generator, and wherein the value of A is different to the value of G.

20. An information coding method as claimed in claim 18 or 19, wherein the method utilises an information carrier as claimed in any one of claims 3 to 17.

21. (Amended) An information coding method as claimed in claim 18 or 19 [any one of claims 18, 19 or 20], wherein the encoded information is determined by detecting the spacing between each pair of adjacent elements and expressing the spacings as a sequence which maintains the order of spacings on the tag, but commences with the spacing of greatest magnitude, and wherein if there are two or more spacings equal to the greatest magnitude, the starting value of the sequence is selected such that the sequence, if read as a number, would have the highest possible value.

22. (Amended) An information coding method as claimed in claim 18 or 19, [any one of claims 18, 19 or 20] wherein the encoded information is determined by detecting the spacing between adjacent elements when considered in turn along a predetermined path.

23. (Amended) An information coding method as claimed in claims 18 or 19 [claims 18, 19 or 20], wherein the encoded information is determined by the following steps:

- i) determining the sequence of spacings between 5 adjacent elements when considered in turn along a first predetermined path;
- ii) determining the sequence of spacings between adjacent elements when considered in turn along a second predetermined path which is opposite in direction to the first predetermined path;
- iii) selecting one of the sequences of spacings by performing an iterative comparison of successive spacings in each of the paths, the selected sequence